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January 18, 2023

ATTN: Cheryl McWilliams, Planner III
Development Review, Planning, Infrastructure and Economic Development
City of Ottawa

Mercedes Liedtke, Environmental Planner
Mississippi Valley Conservation Authority (MVCA)

Re: Site Plan Control Application – MVCA Comments
140 Reis Road

The following review comment was received dated January 10, 2023.

MVCA REVIEW COMMENT

Most of our previous comments were addressed in the revised report. It is acknowledged that the west swale has a capacity issue. As per response comment #4, the actual flow depth of the west swale during a 100-year storm event will exceed the available depth (i.e., 11.3 cm – 10 cm = 1.3 cm), and this will cause the 100-year flow to extend 0.1 metres onto the neighbouring property. It is understood that on-site stormwater quantity control is not required. However, site alteration must not result in additional runoff being directed onto adjacent properties. Please revise to ensure that drainage is contained within the site. It would be beneficial to increase the depth of the swale and/or provide a proper maintenance plan to ensure that the swales will function as designed for the 100-year storm

KOLLAARD RESPONSE:

Kollaard has revised the proposed west swale design notwithstanding the calculations (provided on the following page) that demonstrate that the flooding of the west swale, as designed with a minimum depth of 0.1 metres, does not result in additional flow onto the adjacent property.

The bottom of the swale was lowered by 2 cm as required to increase the minimum available flow depth to 0.12 m which results in an increase in the minimum flow capacity within the swale. The 100 year flow will be completely contained on the subject property. The grading plan and storm sewer design sheet for the 100 year event have been revised accordingly. The Site Servicing and SWM report and the remaining civil drawings have not been revised.

The revised storm sewer design sheet indicates that there is an excess capacity of 4.78 L/s in the west swale. This excess capacity does not include the capacity of the subdrain. As such, the capability of the swale to convey the 100 year flow will be preserved even if the function of the underlying subdrain becomes compromised in any way.

The swale along the west side of the subject site receives runoff from an offsite catchment area of about 744 m^2 with a runoff coefficient of C = 0.52. This 744 m^2 is solely contained on the neighbouring property of concern. A 100 year design storm of 1 hour duration would result in a rainfall of 55.9 mm. Assuming only half of this rainfall runs off the site (C=0.52), this would equal a volume of about 20.8 m^3. It is noted that a 100 year design storm of 2 hours duration would result in a runoff volume of 24.5 m^3. As acknowledge in the comment above, the extend and depth of flooding is 0.1 m x 0.013 m. Assuming the flooding occurs along the entire 48.5 m length of the swale, this would equal a volume of 0.06 m^3.

Given that the runoff from the adjacent property during a 100 year storm event of only 1 hour duration results in a runoff volume of 20.8 m^3 onto the subject site and the flooding in the swale from the subject site results in a temporarily stored runoff volume of only 0.06 m^3 on the neighbouring property during the same storm event, the current design does not result in additional runoff being directed onto the adjacent property.

The current design does not result in additional flow onto the neighbouring property, it reduces the flow from the neighbouring property on to the subject site during a 100 year storm event of 1 hour duration by 0.3 percent from a runoff volume about 20.8 m^3 to about 20.7 m^3.

We trust that this response provides sufficient information for your present purposes. If you have any questions concerning this response please do not hesitate to contact our office.

Sincerely,

Steven deWit, P.Eng.
Kollaard Associates Inc